	Application No.	Applicant(s)
Notice of Allowability	10/005,193	CHEN ET AL.
	Examiner	Art Unit	
	Fred I. Ehichioya	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to _1/27/2006_.

2. ☒ The allowed claim(s) is/are _1, 2, 4, 5, 7 - 10, 18 - 21, 36, 38 - 40, 42 - 44, and 45 (renumbered 1 - 20)_.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the
            International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)
1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

SHAHID ALAM
PRIMARY EXAMINER

DETAILED ACTION

Examiner's Amendment

1.   During telephone conversation with Philip S. Lyren, Attorney for the

Applicants, Registration Number 40,709 on April 13, 2006 authorizations for this

Examiner's amendment was given in a telephone interview.

An examiner's amendment to the record appears below. Should the

changes and/or additions be unacceptable to applicant, an amendment may be

filed as provided by 37 CFR1.312. To ensure consideration of such an

amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the claims,

Please amend the followings:

1. (currently amended) A method of storing and ordering image data in a

database comprising:

gathering a plurality of images for inclusion in the database;

computing, by a Fourier-Mellin Transform (FMT), a match descriptor

indicative of each of the plurality of images, each of the match descriptors

corresponding to a multidimensional space having more than two dimensions;

~~and~~

organizing the match descriptors in the database, the organizing being

performed according to a predetermined metric indicative of a correspondence

between a given match descriptor and the other match descriptors in the

database, wherein the predetermined metric defines a similarity between two

different match descriptors such that the similarity is a ratio of a number of

elements common to two sets of match descriptors and a total number of unique

elements in the two sets of match descriptors;

<u>receiving a target image for which a match is sought;</u>

<u>computing a target descriptor indicative of the target image;</u>

<u>mapping into the database to determine a close match of the target</u>

<u>descriptor among the organized match descriptors;</u>

<u>selecting a candidate match descriptor from among the organized match</u>

<u>descriptors; and</u>

<u>returning the candidate match descriptor if the candidate match descriptor</u>

<u>is a match to the target descriptor, the match being determined by a similarity</u>

<u>metric, wherein the predetermined similarity metric defines a ratio of (i) a number</u>

<u>of descriptors common to the target and candidate match descriptors and (ii) a</u>

<u>total number of descriptors unique to the target and candidate match descriptors.</u>

42. (currently amended) A method of software execution for storing and ordering

image data, comprising:

dividing each image of plural images into plural regions;

computing, by a Fourier-Mellin Transform (FMT) for each region, a

descriptor that correspond to multidimensional space having more than two

dimensions;~~and~~

organizing the descriptors in the database by applying a similarity metric

to measure a difference between two images, wherein the difference between

two different sets of descriptors is a ratio of a number of elements common to the

two sets and a total number of unique elements in the two sets;

receiving a target image for which a match is sought;

computing a target descriptor indicative of the target image;

mapping into the database to determine a close match of the target

descriptor among the organized descriptors;

selecting a candidate match descriptor from among the organized

descriptors; and

returning the candidate match descriptor if the candidate match descriptor

is a match to the target descriptor, the match being determined by a similarity

metric, wherein the predetermined similarity metric defines a ratio of (i) a number

of descriptors common to the target and candidate match descriptors and (ii) a

total number of descriptors unique to the target and candidate match descriptors.

43. (currently amended) The method of claim 42 further comprising:

computing, by the FMT, thea target descriptor for the-a target image;

using the similarity metric to determine similarity between the target

descriptor and at least one candidate descriptor from the descriptors.

Allowable Subject Matter

2.   Claims 1, 2, 4, 5, 7 – 10, 18 – 21, 36, 38 – 40, 42 – 44 and 45(renumbered 1.– 20) are allowed over the prior art of record.

3.   The following is an examiner's statement of reasons for allowance:

The prior art of record, (Derrode) discloses specific formula for determining a distance or similarity between two images but fail to anticipate or render obvious the recited feature "a similarity is a ratio of a number of elements common to two sets of match descriptors and a total number of unique elements in the two sets match descriptors"; (USPN 6,049,797 and also Syracuse University) discloses a possible definition of similarity between two transactions and similarity is a ratio of a number of elements common to two sets but fail to anticipate or render obvious the recited feature "computing, by a Fourier-Mellin Transform (FMT), a match descriptor indicative of each of the plurality of images, each of the match descriptors corresponding to a multidimensional space having more than two dimensions" as recited in the independent claims.

The dependent claims, being definite, further limiting, and fully enabled by the specification are also allowed.

4.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Fred I. Ehichioya whose telephone number is

571-272-4034. The examiner can normally be reached on M - F 8:00 AM to 4:30

PM.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, John E. Breene can be reached on 571-272-4107. The

fax phone number for the organization where this application or proceeding is

assigned is 703-872-9306.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

Fred I. Ehichioya
Patent Examiner
Art Unit 2162

April 14, 2006

SHAHID ALAM
PRIMARY EXAMINER